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Jun 28, 2000

DERWENT-ACC-NO: 2000-414590

DERWENT-WEEK: 200036

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TITLE: Preparation of silicone oil-in-water emulsion containing non-crosslinked silicone copolymer comprises polymerizing polydiorganosiloxane with amine functional trialkoxysilane and addition of anhydride, useful in personal care products

INVENTOR: DALLE, F; MARTEAUX, L

PATENT-ASSIGNEE:

ASSIGNEE

CODE

DOW CORNING SA

DOWO

PRIORITY-DATA:

1998GB-0026394

December 2, 1998

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 1013700 A2	June 28, 2000	E	008	C08G077/26
AU 9963008 A	June 8, 2000	N/A	000	C08G077/16

DESIGNATED-STATES: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI  
LT LU LV MC MK NL PT RO SE SI

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-NO
EP 1013700A2	December 1, 1999	1999EP-0309662	N/A
AU 9963008A	December 1, 1999	1999AU-0063008	N/A

INT-CL (IPC): C08G 77/16; C08G 77/26; C08G 77/38; C08G 77/388;  
C08L 83/04

ABSTRACTED-PUB-NO: EP 1013700A

BASIC-ABSTRACT:

NOVELTY - In the preparation of an oil-in-water emulsion, where the oil component is a silicone polymer, a trialkoxysilane is employed in the manufacture of the silicone polymer and the polymerization is interrupted when a desired viscosity has been

achieved by addition of an anhydride.

DETAILED DESCRIPTION - Preparation of a silicone oil-in-water emulsion containing a linear non-crosslinked silicone copolymer comprises:

(A) polymerizing an OH endblocked polydiorganosiloxane with an amine functional trialkoxysilane in the presence of a metal catalyst;

(B) adding to the reaction product of step (A) a carboxylic anhydride;

(C) subsequently emulsifying the copolymer prepared during step (A).

ACTIVITY - Dermatological.

USE - The emulsions are useful in personal care applications such as on hair, skin, mucus and teeth. The silicone improve the properties of skin creams, skin care lotions, moisturizers, facial treatments such as in acne or wrinkle removers, personal and facial cleansers, bath oils, perfumes, fragrances, colognes, sachets, sunscreens, pre-shave and after shave lotions, shaving soaps and shaving lathers. The emulsions can be used in hair shampoos, hair conditioners, hair sprays, mousses, permanents, depilatories, and cuticle coats, to provide conditioning benefits. In cosmetics, the emulsion may function as a leveling and spreading agent for pigments, in make-ups, color cosmetics, foundations, blushes, lipsticks, eye liners, mascaras, oil removers, color cosmetic removers, and powders. The emulsions may also be used as a delivery system for oil and water soluble substances, e.g. vitamins, organic sunscreens, ceramides, and pharmaceuticals. When compounded into sticks, gels, lotions, aerosols and roll-ons, the emulsions impart a dry silky-smooth payout. The emulsions can be mixed with deposition polymers, surfactants, detergents, antibacterials, antidandruffs, foam boosters, proteins, moisturizing agents, suspending agents, opacifiers, perfumes, coloring agents, plant extracts, polymers, and other conventional personal care ingredients. Further, the emulsions may be used in textile fiber treatment, leather lubrication, fabric softening, release agents, water based coatings, oil drag reduction, lubrication, and facilitation of cutting cellulose materials.

ADVANTAGE - Use of a trialkoxysilane speeds up the polymerization kinetics significantly compared to prior art methods employing dialkoxy silane, and this does not lead to a crosslinked material when the trialkoxysilane is used in low amounts. Reversion of the polymer is avoided by adding an acid anhydride to the polymer prior to emulsification.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: PREPARATION SILICONE OIL WATER EMULSION CONTAIN  
NON CROSSLINK SILICONE COPOLYMER COMPRISE AMINE FUNCTION ADD

## ANHYDRIDE USEFUL PERSON CARE PRODUCT

DERWENT-CLASS: A26 A82 A96 A97 B07 D18 D21 D25 F06 G02 H07

CPI-CODES: A06-A00B; A07-B04; A12-V04; B04-C03D; B12-M03;  
B14-N17; B14-R01; B14-R02; D07-B; D08-B; D11-A; F03-C05;  
F03-E01; G02-A01A; G02-A05; H07-G09;

## CHEMICAL-CODES:

## Chemical Indexing M1 \*01\*

## Fragmentation Code

M423 M720 M781 M905 N152 P943 Q120 Q242 Q252 Q253  
Q254 Q263 Q273 Q322 Q332 Q416 R022

## Specific Compounds

A08SWK A08SWP A08SWU

## Chemical Indexing M1 \*02\*

## Fragmentation Code

B414 B514 B713 B720 B744 B796 B799 B833 G010 G019  
G020 G021 G029 G040 G100 G111 G112 G113 G221 G299  
H1 H100 H102 H181 H182 H183 H582 H584 M121 M122  
M124 M129 M144 M148 M149 M210 M211 M212 M213 M214  
M215 M216 M220 M221 M222 M223 M224 M225 M226 M231  
M232 M233 M250 M272 M280 M281 M282 M283 M312 M313  
M314 M315 M321 M322 M323 M332 M342 M361 M383 M391  
M392 M393 M423 M510 M520 M530 M531 M532 M533 M540  
M620 M720 M781 M904 M905 N152 P943 Q120 Q242 Q252  
Q253 Q254 Q263 Q273 Q322 Q332 Q416 R022

## Markush Compounds

200019-25301-K 200019-25301-P 200019-25301-U

## Chemical Indexing M2 \*03\*

## Fragmentation Code

K0 L5 L543 M210 M211 M262 M282 M320 M416 M620  
M730 M904 M905 M910

## Specific Compounds

00840K 00840S

## Registry Numbers

0840S 0840U

## Chemical Indexing M2 \*04\*

## Fragmentation Code

G010 G019 G100 K0 L5 L543 M280 M320 M414 M510  
M520 M532 M540 M730 M904 M905

## Specific Compounds

06581K 06581S

## Chemical Indexing M2 \*05\*

## Fragmentation Code

F012 F015 F113 J5 J522 L9 L930 M280 M320 M413  
M510 M521 M530 M540 M730 M904 M905 M910

## Specific Compounds

00842K 00842S

## Registry Numbers

0842S 0842U

## Chemical Indexing M2 \*06\*

## Fragmentation Code

D013 D111 J5 J522 K0 L9 L930 M280 M320 M412  
M511 M520 M530 M540 M730 M904 M905 M910

## Specific Compounds

00517K 00517S

Registry Numbers  
0517S 0517U

## Chemical Indexing M2 \*07\*

Fragmentation Code  
F012 F015 F112 J5 J522 L9 L930 M280 M320 M413  
M510 M521 M530 M540 M730 M904 M905 M910  
Specific Compounds  
00843K 00843S  
Registry Numbers  
0843S 0843U

UNLINKED-DERWENT-REGISTRY-NUMBERS: 0517S; 0517U ; 0840S ; 0840U ; 0842S ;  
0842U ; 0843S ; 0843U

## ENHANCED-POLYMER-INDEXING:

Polymer Index [1.1] 018 ; G2288 G2277 G2266 D01 Si 4A G2459\*R F07 G2460 G2459 D11  
D10 D50 D90 D88 D92 D89 D86 D93 F08 F09 F10 F87 F86 ; R10366 G2459 D01 D11 D10  
D50 D88 F09 F07 F86 F87 ; R03119 G2459 D01 D11 D10 D50 D89 F08 F07 F86 F87 ;  
H0011\*R ; H0044\*R H0011 ; P1445\*R F81 Si 4A ; P1456 P1445 F81 F86 D01 D11 D50 D82  
Si 4A ; L9999 L2528 L2506 ; L9999 L2346 ; L9999 L2777 ; S9999 S1025 S1014 ; S9999  
S1376 Polymer Index [1.2] 018 ; ND03 ; ND07 ; N9999 N5947 ; B9999 B5027 B5016 B4977  
B4740 ; Q9999 Q9165\*R ; B9999 B3587 B3554 ; B9999 B3598 B3554 ; B9999 B5209 B5185  
B4740 ; Q9999 Q9176 Q9165 ; Q9999 Q9187 Q9165 ; Q9999 Q9198 Q9165 ; Q9999 Q8037  
Q7987 ; K9905 ; K9869 K9847 K9790 ; B9999 B4251 B4240 ; Q9999 Q6699 ; K9745\*R ;  
K9518 K9483 ; K9541 K9483 ; K9676\*R ; K9687 K9676 ; K9712 K9676 ; Q9999 Q7114\*R ;  
B9999 B5094 B4977 B4740 Polymer Index [1.3] 018 ; D01 D19 D18 D32 D76 D50 D65 D93  
F39 ; R00840 D01 D11 D10 D50 D65 D84 F39 ; R00842 G1401 G1398 G4024 D01 D23 D22  
D31 D42 D50 D65 D75 D84 F39 E00 E11 ; R00517 G1401 G1398 G4024 D01 D24 D22 D32  
D42 D50 D65 D77 D88 F39 E00 E19 ; R00843 G0760 G0022 D01 D23 D22 D31 D42 D51  
D53 D59 D65 D75 D84 F39 E00 E01 ; C999 C204 ; C999 C306 Polymer Index [1.4] 018 ;  
D01 D11 D10 D50 D61\*R D63 D68 D94 D95 D92 D90 D89 D84 D88 D19 D18 D31 D32  
D76 E11 E00 E17 F37 F35 F38 F90 F41 F91 Sn 4A O\* 6A Gm ; R00415 D01 D11 D10 D50  
D61 D68 D95 Sn 4A ; R05124 D01 D11 D10 D50 D61 D68 D92 F36 F35 Sn 4A ; R05350  
D01 D11 D10 D50 D61 D93 F36 F35 Sn 4A ; C999 C102 C000 ; C999 C306 Polymer Index  
[1.5] 018 ; D01 D11 D10 D50 D61\*R F16 Cl 7A ; A999 A635 A624 A566 ; K9643 K9621

## SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C2000-125791